

REMARKS/ARGUMENTS

Claims 1, 3-5, 7-9, and 11-15 are pending and stand rejected.

Claims 1, 5, and 9 are rejected under 35 U.S.C. §112(2) as lacking antecedent basis for the limitation “the communication cable is connected.”

Claims 1, 3-5, 7-9, and 11-15 are rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent 6,502,205 to Yanai et al. (hereinafter “Yanai”).

Claims 1, 5, 9, and 13-15 are amended. New claims 16-18 are added. Support for the new and amended claims can be found throughout the application. For example, among other places, support for the claims is provided by Figs. 3, 4, 6, 10, and 11. No new matter has been added.

Examiner Interview

An interview with Examiner Mohammad Siddiqi was conducted on August 9, 2007. During the interview, a proposed amendment was discussed without reaching agreement. Examiner Siddiqi suggested other references as potentially relevant to the subject matter of the application, but did not articulate specifics. Although the interview was not productive, Applicants nonetheless thank Examiner Siddiqi for his time and effort.

Rejections under Section 112

Claims 1, 5, and 9 are rejected on grounds that there is insufficient antecedent basis in the specification for the limitation “the communication cable is connected...” Applicants respectfully submit that this limitation is fully supported. As one example of support, page 11 of specification states “The path 300 is a communication channel between the information processor 100 and storage system 200, which includes both a physical path that is physically constituted from hardware components for connection between the information processor 100 and storage system 200 and a logical path that is logically set up to the physical path.” Fig. 10 shows a host port 160 of information processor 100 as being physically connected to a channel adapter 230 of the storage system 200. It is submitted that these and other relevant portions of

the specification provide support for the claim limitation. Accordingly, withdrawal of the rejection under 35 U.S.C. §112 is requested.

Rejections under Section 102

A. Claims 1, 5, 9

Claim 1 recites a computer-readable storage medium having a program for use in a host computer. The host computer has “a function of displaying at a user interface management information items relating to a plurality of independent communication paths.” The program comprises “code configured to monitor status information for each of said communication paths and to store said status information at said host computer, said status information specifying a relationship for each communication path between a path ID of said communication path, a disk controller port ID of said disk controller, and a logical volume ID of said storage device, and wherein said status information includes an access status for each communication path indicating whether said communication path is online or offline.” In addition, the program comprises “code configured to...update at least one of said management information items being displayed to express the present access status of a communication path responsive to a change in the status information corresponding to said communication path, the change indicating a failure of the communication path and/or updated information received as input through said user interface.” Applicants respectfully submit that the cited reference does not disclose at least these features.

Yanai discusses a remote mirroring system in which data from a host computer is stored in a primary data storage system and then copied from the primary storage system to a secondary storage system. See, Yanai at Fig. 4. If the primary system detects that an error has occurred during the copy operation, it sends a “unit check” signal to the host computer and the host computer retries the I/O operation. See, Yanai at col. 16, lines 8-13. Yanai is concerned that two copies of the data are made before an I/O operation is completed and focuses closely on the connection between the different storage systems. Id.

According to Yanai, the primary and secondary storage systems are connected by communication links (240, 241) which are supported by link adapters (237) disposed in each

storage system. See, Yanai at col. 13, lines 7-23. Remote mirroring (RM) software permits administration of these storage-to-storage communication links. For example, Yanai discloses that the SQ LINK command can be used to perform a link-adapter status check. See, Yanai at col. 48, lines 1-7. Here again, the focus is upon the connection between primary and secondary storage systems as it relates to remote mirroring operations.

Unlike the present invention, Yanai does not disclose monitoring the status of independent communication paths between a host computer and a storage system. Specifically, Yanai fails to disclose “displaying at a user interface management information items relating to a plurality of independent communication paths.” Additionally, there is no disclosure of “code configured to *monitor status information for each of said communication paths...* said status information specifying a relationship for each communication path between a path ID of said communication path, a disk controller port ID of said disk controller, and a logical volume ID of said storage device.” Finally, Yanai does not disclose “code configured...to *update at least one of said management information items being displayed to express the present access status of a communication path responsive to a change in the status information corresponding to said communication path, the change indicating a failure of the communication path and/or updated information received as input through said user interface.*”

Yanai thus fails to disclose each and every element as set forth in the claim. Therefore, for at least the reasons identified above, it is respectfully submitted that claim 1 is not anticipated by the reference. As amended, claim 5 and claim 9 each recite similar features and are not anticipated by Yanai as previously discussed. Applicants therefore respectfully requests reconsideration and allowance of claims 1, 5, and 9.

B. Dependent claims

Claims 3, 4, 13 and 16 depend from claim 1. Claims 7, 8, 14, and 17 depend from claim 5. Claims 11, 12, 15, and 18 depend from claim 9. Each dependent claim incorporates the limitations of its respective base claim and is therefore allowable over Yanai for at least the reasons presented above.

Applicants further submit that Yanai fails to disclose the claimed user interface for displaying information about a plurality of communication paths. As best understood, Yanai discusses only a command-line system in which users specify hardware elements by identification number. See, Yanai at col. 46, line 50 to col. 59, line 45 (“Host Remote Mirroring Software Status Commands”). This appears to be merely a request-response interaction and not a user interface with the claimed features. Thus, Yanai does not disclose a host computer that “has a function of *displaying at a user interface management information items relating to a plurality of independent communication paths*” as recited in each of the independent claims.

Moreover, Yanai does not disclose that “said management information displayed at said user interface is changed in real time based on receiving failure information from said storage device” as recited in claims 13-15. Nor does Yanai disclose “a graphical user interface configured to display said management information items, and wherein said status information is updated in response to a selection of said management information items displayed by said graphical user interface” as recited in claims 16-18. For at least these additional reasons, the present claims are not anticipated by the cited reference.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,



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